

### REMARKS

The Official Action dated December 13, 2002 has been carefully considered. Accordingly, the changes presented herewith, taken with the following remarks, are believed sufficient to place the present application in condition for allowance. Reconsideration is respectfully requested.

Applicants appreciate the Examiner's withdrawal of the restriction requirement and it is thereby acknowledged that claims 1-58 are pending and subject to examination.

The oath or declaration was deemed defective for failure to comply with 37 C.F.R. §1.67(a). In particular, the Examiner states that the signature of one of the inventors is missing. Though the signature deemed to be missing was not specifically identified, after inspection, it is assumed to be that of Daniel Scott Cobb. Accordingly, enclosed herewith is a Declaration Combined with Power of Attorney, signed and dated by Mr. Cobb. Applicants believe this substitute Declaration is in full compliance with the above code section, and that the objection has been overcome.

By present amendment, the specification is amended to include disclosure from present claims 15, 16 and 18. It is believed that these changes do not involve the introduction of any new matter, whereby entry is believed to be in order and is respectfully requested.

#### *35 U.S.C. § 112, first paragraph*

Claim 18 was rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, the Examiner noted that claim 18 recites a hydrotrope with a complexation constant of no greater than about 1,000 M<sup>-1</sup>. However, the Examiner asserts

that the specification does not reveal any description of such a hydrotrope, and fails to mention such a requirement for the instant cyclodextrin (hereinafter CD) - containing compositions. The Examiner further asserts, that one of ordinary skill in the art would not be able to determine what kinds of compounds are encompassed by the claimed term "hydrotrope," and what such compounds would be useful for the instant composition. The Examiner therefore concludes that one of ordinary skill in the art would have to perform undue experimentation to determine why and how and what hydrotropes need to be present in the instant composition. For the reasons fully explicated below, Applicants respectfully traverse this rejection and request reconsideration.

Initially, Applicants note that the specification has been amended to describe the subject matter of claim 18. Additionally, Applicants submit that the term "hydrotrope" has an unambiguous meaning, well-known to practitioners in the art. Since substances with highly variable chemical and structural characteristics can behave as hydrotropes, it is a widely accepted practice to describe the class by the behavior, merely by use of the word. As the Examiner points out, a hydrotrope is a chemical that has the property of increasing the aqueous solubility of various slightly insoluble organic chemicals. Hence, the "kinds of compounds...encompassed by...hydrotrope" are determined by reference to the word itself, and any given compound can be assessed for hydrotropic properties by simple laboratory means well-known in the art. Clearly, since the disclosure does not identify specific hydrotropes, the presumed intent is to encompass any and all hydrotropes defined by the recited claim terms, i.e. those which comprise organic compounds having a complexation constant with CD of no greater than about  $1,000M^{-1}$ .

Applicants draw attention to the governing rule pertaining to terms found only in the claims: "in establishing a disclosure, applicant may rely not only on the description and

drawing as filed but also on the original claims if their content justifies it. Where subject matter not shown in the drawing or described in the description is claimed in the application as filed, and such original claim itself constitutes a clear disclosure of this subject matter, then the claim should be treated on its merits, and requirement made to amend the drawing and description to show this subject matter. The claim should not be attacked either by objection or rejection because this subject matter is lacking in the drawing and description. It is the drawing and description that are defective, not the claim. ...disclosure in the claim must be sufficiently specific and detailed to support the necessary amendment of the drawing and description." MPEP 608.01(1) Original Claims.

Applicants submit that the rejection has been overcome respectfully request reconsideration.

Claims 15 and 16 were rejected under 35 U.S.C. § 112, first paragraph. The Examiner asserts that the specification, while being enabling for CD-incompatible surfactants, does not reasonably provide enablement for CD-incompatible surfactants with the claimed ClogP values. The Examiner notes that the instant claims recite CD-incompatible surfactants having a ClogP value of about 3.5, and that the instant specification describes a number of CD-incompatible surfactants, but does not describe any CD-incompatible surfactants with the claimed ClogP values.

This rejection is traversed and reconsideration is respectfully requested. Initially, Applicants note that the specification is amended to describe the subject matter of claims 15 and 16. Additionally, Applicants submit that, since ClogP is a non-empirically derived value, and, since it represents merely a degree of hydrophobicity regardless of the behavioral classification of the chemical at issue, it can be derived for any chemical structure, including CD-incompatible surfactants, by means well-known in the art.

The partition coefficient is the equilibrium concentration of solute in a non-polar solvent divided by the concentration of the same species in a polar solvent. The logarithm of this coefficient is known as logP, and is a parameter of hydrophobicity. Clearly, since ClogP is the log of a ratio, in order to have a value of "at least about 3" (claim 15), or "at least about 3.5" (claim 16), the substance at issue must be hydrophobic. Hence, there is no confusion as to what type of molecule yields values in that range. Moreover, there is no undue experimentation required to generate the ClogP value. ClogP is a calculated estimate of logP, derived from structural features and interaction factors of a molecule. It is *not* experimentally generated, hence, undue experimentation cannot result. There are several well-known proprietary software systems that enable fast and reliable calculated log Ps (see, for example, Pomona MedChem's ClogP3). These are not specific to perfumes. All this is disclosed via text and incorporated references in the specification on page 33, lines 7-19. Hence, Applicants submit that the rejection is overcome and reconsideration is respectfully requested.

#### *Double Patenting*

Claims 1-12, 14-16, 19-37, 42-44 and 49-52 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-30 of U.S. Patent No. 6,033,679 to Woo et al. (hereinafter Woo '679). Specifically, the Examiner states that although the claims are not identical, they are not patentably distinct because the patented claims, directed to a composition comprising uncomplexed CD and a CD surfactant, are within the scope of the instant claims. The Examiner asserts that while the claims do not specifically state the claimed complexation constant, critical micelle concentration (CMC) or molecular aggregates, the patent specification describes the same surfactants as "CD-compatible", which are also described in the instant specification. The Examiner further asserts that it is implicit that the patented surfactants exhibit such properties claimed. Finally,

the Examiner asserts that the patent composition and the instant composition are used for the same purpose and it would have been obvious for one of ordinary skill in the art at the time of the instant invention to include a CD-compatible surfactant with an expectation to reduce or lower the surface tension of the composition containing CD.

This rejection is traversed and reconsideration is respectfully requested. While the patented composition of Woo '679 optionally comprises a CD-compatible surfactant, the present inventive composition stipulates the inclusion of a CD-compatible surfactant selected from a group consisting of particular recited surfactants. The Woo '679 specification discloses CD-compatible surfactants at col. 8 - 11, and a careful inspection of the disclosure fails to reveal any of the surfactants comprising the Markush group of the present invention. In addition to comprising species undisclosed in Woo '679, the presently recited Markush group is patentably distinct from the Woo '679 CD-compatible surfactants in terms of application. Woo '679 not only discloses few anionic surfactants, but, with respect to those in fact disclosed, teaches, at col. 11, lines 63-67, that they should not be used in conjunction with antimicrobial actives. The CD-compatible surfactants of the present invention, on the other hand, are also anionic, but have no such limitation on use. Hence, the present invention is not an obvious variation of the patented composition and the doctrine of obviousness-type double patenting is not applicable.

Further, the "functionally available CD" of the present invention is neither equivalent to, nor an obvious variation of the "uncomplexed CD" of Woo '679. "Uncomplexed CD" is defined in Woo '679 at col. 6, lines 33-35, as being CDs wherein the cavities within the CD in the solution remain essentially unfilled. Whereas, the present specification defines "functionally available CD" as CD that is either not complexed with other materials (e.g. uncomplexed), or is complexed with materials that only weakly complex with CD, weakly

being defined further according to complexation constant, but, essentially, that which complexes more readily with unwanted surface molecules than with CD (page 3, lines 31-33 thru page 4, lines 1-9). The inclusion of complexed CD in the solution is novel and nonobvious in light of the Woo '679 teaching that complexed CD is undesirable. Hence, the present compositions, which may contain complexed CD, are not an obvious variation of the patented composition, and the doctrine of obviousness-type double patenting is not applicable.

Since there are at least two features of the present invention which render it patentably distinct from the patented Woo '679 compositions, the reasoning underpinning the judicially created doctrine of double patenting does not apply. Reconsideration is respectfully requested.

Claims 1-37 and 42-52 were rejected under the doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 6,437,442 to Woo et al. (hereinafter Woo '442). Specifically, the Examiner states that although not identical, the claims of the present invention are not patentably distinct because the process of making a CD composition claimed in the patent includes the instant composition, and that both sets of claims require the same components and recite the same order of mixing CD with surfactants.

While Applicant believes that the claims of the present application are distinguishable from those of the Woo '442, a Terminal Disclaimer in compliance with 37 CFR 1.321(c) and 37 CFR 1.130(b) is presently being prepared and will be submitted shortly/is submitted herewith. The filing of a Terminal Disclaimer serves the statutory function of removing the rejection of double patenting, but does not raise presumption or estoppel on the merits of the rejection, *Quad Environmental Technology v. Union Sanitary District*, 20 U.S.P.Q. 1392 (Fed. Cir. 1991). It is therefore submitted that the rejections under the judicially created

doctrine of obviousness-type double patenting are overcome. Reconsideration is respectfully requested.

Claims 1-37 and 42-52 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-52 of copending application No. 09/855,440. While Applicant believes that the claims of the present application are distinguishable from those of the cited copending applications, a Terminal Disclaimer to overcome this rejection is presently being prepared and will be submitted shortly. The filing of a Terminal Disclaimer serves the statutory function of removing the rejection of double patenting, but does not raise presumption or estoppel on the merits of the rejection. *Quad Environmental Technology v. Union Sanitary District*, 20 U.S.P.Q. 1392 (Fed.Cir. 1991). It is therefore submitted that upon filing the Terminal Disclaimer, the provisional rejection under the judicially created doctrine of obviousness-type double patenting will be overcome.

*35 U.S.C. § 103(a)*

Claims 1-12, 14-16, 19-37, 42-44 and 49-52 were rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 3,033,679 to Woo et al. (Woo '679). In particular, the Examiner asserts that Woo '679 teaches a composition containing uncomplexed CD to absorb malodors from inanimate as well as animate surfaces, a CD compatible surfactant, and optionally other components such as surfactant, perfumes, antimicrobials, etc, and, further, that Woo teaches concentrations of 0.01% CD and 0.01-2% surfactant. The Examiner notes that Woo teaches that the CD cavities in solution are unfilled, i.e. uncomplexed, and that a surfactant that is compatible with uncomplexed CD provides a low surface tension that permits the composition to penetrate, and spread readily and more uniformly on hydrophobic, oily soil for improved malodor control. Further, the Examiner notes that Woo

teaches that the surfactant should not complex with CD so as to diminish the performance of CD. The Examiner asserts that Woo describes the same CD compatible surfactants that are also described in the instant specification, and teaches the same CDs, surfactants, and polymers, though, without mentioning the specific amounts of functionally available CDs, the claimed complexation constants, or the CMCs. Finally, the Examiner concludes that it would have been obvious for one of ordinary skill in the art at the time of the instant invention to use a CD compatible surfactant and a polymer in a composition containing uncomplexed CD, and use it for cleaning surfaces and/or absorbing malodors, and to optimize the amounts such that the efficacy is not diminished.

As will be set forth in detail below, Applicant submits that the compositions defined by claims 1-12, 14-16, 19-37, 42-44, and 53-58, and the methods defined by claims 49-52, are not rendered obvious by Woo '679. Accordingly, this rejection is traversed and reconsideration is respectfully requested.

Independent claim 1 of the present invention is directed to a composition comprising functionally available CD and a CD-compatible surfactant selected from a Markush group consisting of specific surfactants and mixtures thereof, wherein the concentration of functionally-available CD is at least about 0.001%. "Functionally available" is defined in the specification at page 3, lines 31-33 as CD that is either not complexed with other materials (e.g. uncomplexed, free CD), or is complexed with materials that only weakly complex with CD. "Weakly", is defined with respect to complexation constant such that the material bound to the CD cavity would be replaced by the unwanted molecules on the surface to be cleaned.

Contrast this to the "uncomplexed CD" of Woo '679, in which the cavity is essentially free of any complexing agent. The Woo statement at col. 8, lines 58-65, "the surfactant should not complex with CD so as to diminish the performance of CD," cited by the Examiner in an



attempt to assert equivalence between "uncomplexed" and "functionally available", is inherently ambiguous. Given the absence of any teaching or suggestion in Woo that surfactants which act as complexing agents to CD comprise the requisite claimed "uncomplexed" CD, taken with both the plain and explicated meanings of "uncomplexed," it is likely that the intended meaning of that sentence is to convey that occupation of the CD cavity would diminish CD performance. In fact, Applicants, at page 23, lines 12-14 note that it was surprisingly found that compositions could be carefully formulated to comprise both CD compatible material and functionally available CD. Hence, compositions comprising the "functionally available" CD of the present invention, which may comprise complexed CDs, are unique to the present invention.

Furthermore, the Examiner's assertion that Woo '679 describes the same CD compatible surfactants as those described in the instant specification is incorrect. The present invention specifically claims certain species of anionic CD-compatible surfactants, none of which are disclosed in Woo. Woo does disclose several other species of anionic CD-compatible surfactants, but states that they are incompatible with antimicrobial agents, a limitation on use not applicable to the instantly claimed anionic surfactants. Hence, compositions comprising the presently claimed CD-compatible surfactants are not obvious variations of the Woo compositions.

In order to render a claimed invention obvious, the prior art must enable one skilled in the art to make and use the claimed invention, *Motorola, Inc. v. Interdigital Tech. Corp.*, 43 U.S.P.Q.2d 1481, 1489 (Fed. Cir. 1997). In view of the failure of Woo to recognize, teach or suggest the inclusion of complexed CDs which comprise the "functionally available" CDs of the present invention, and in view of the absence in Woo of any of the CD-compatible surfactants presently claimed, Woo does not enable one of ordinary skill in the art to make

and use the claimed invention. Thus, Woo does not render the present invention obvious, and reconsideration is respectfully requested.

Claims 1-37 and 42-52 are rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,436,442 to Woo et al (Woo '442). This application claims the benefit of a provisional application filed on May 15, 2000, which is on or after November 29, 1999. Without agreeing with or commenting on the merits of the rejection, Applicants submit herewith a Declaration of Common Ownership showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same entity, and invoke MPEP §§ 706.02(1)(1 and 2) to overcome this rejection.

Claims 1-37 and 42-52 were rejected under 35 U.S.C. 103(a) as being obvious over 09/855,440 (PGPUB 2002000705) to Uchiyama et al. (Uchiyama). Applicants draw attention to the filing dates of these two applications. The present application claims the benefit of a provisional application with a filing date of May 15, 2000, and has a filing date of May 15, 2001. The referenced application has a filing date of May 15, 2001. Hence, the reference cannot be used to defeat the present application under 35 U.S.C. 103(a), since the reference is not "prior art" with respect to the present application, as required under that statute.

Claims 1-58 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 6,001,789 to Trinh et al. (Trinh), in view of U.S. 6,436,442 to Woo et al (Woo'442). Specifically, the Examiner asserts that Trinh teaches detergent compositions for cleaning toilet bowls containing perfume with a ClogP value of at least about 3, a detergent surfactant such as an amino alkyl betaine, a detergent builder such as citric acid, and a dissolution retarding system comprising a polymer, with composition pH maintained at 2 to 11. The Examiner also notes that Trinh teaches protective carriers for the perfume materials in their

composition, which comprise CD inclusion complexes. The Examiner further asserts that the detergent surfactants described by Trinh, in particular, the betaines, read on the instant CD incompatible surfactants. The Examiner concludes that it would have been obvious to combine the compositions of Trinh with the CDs and compatible surfactants of Woo '442 "due to the increased capability of the CD molecules to complex with the malodorous molecules because of their functionally available sites for such molecules."

For reasons fully explicated below, Applicants respectfully disagree and reconsideration is requested.

Trinh discloses nothing pertaining to CDs which would have motivated or suggested a combination with Woo '442 to form the present inventive composition. The present claims are directed to a composition suitable for capturing unwanted molecules, comprising functionally available CD (defined *supra*, though, generally, uncomplexed CD and/or complexed CD with complexation constants lower than the unwanted molecules), and a CD-compatible surfactant selected from a Markush group of specific anionic surfactants, wherein the concentration of functionally available CD is at least about 0.001%. On the other hand, Trinh comprises CD only to the extent it is bound up in CD/perfume inclusion complexes. The CDs of both Woo'442 and the present invention function as the "cleaning" vehicle of the composition...by forming complexes with unwanted molecules on the surface to be cleaned, hence, they must be available to perform this function when placed in contact with the surface. The CDs of Trinh are intended to be complexed with wanted molecules, i.e., ~~perfume molecules, and are complexed upon contact with the surface to be cleaned. There~~

would be no reason why a person of ordinary skill in the art, seeking to solve the problem of providing a perfume carrier for detergent compositions, would reference the teachings of Woo, which seek to provide functionally available CDs. Conversely, there is no reason why

a person of ordinary skill in the art, seeking to develop a means to capture unwanted molecules, would be motivated by the Trinh reference. The problems sought to be solved by each invention are completely different.

Further, the Examiner's assertion that the surfactants of Trinh read on the present surfactants is inaccurate. The Trinh block detergent composition comprises a cleaning system comprising, inter alia, a detergent surfactant. The Trinh specification notes that there are several types of detergent surfactants, but that amphoteric and zwitterionic surfactants are preferred, particularly betaines.(col. 13. lines 39-40 and col. 14, lines 31-38). The present composition, on the other hand, comprises specific surfactants, none of which are amphoteric or zwitterionic, and none of which can be found anywhere in the Trinh disclosure. The Examiner's particular reference to betaines as a commonly disclosed surfactant is simply unfounded.

There must be a teaching or suggestion within the prior art, within the nature of the problem to be solved, or within the general knowledge of a person of ordinary skill in the field of the invention, to look to particular sources, to select particular elements, and to combine them as combined by the inventor. *See Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 665, 57 USPQ2d 1161, 1167 (Fed. Cir. 2000). Applicants can find no basis upon which to conclude that a person seeking to develop a CD-based composition for capturing unwanted molecules would look to, or select, any element from Trinh, regardless of the combinant secondary reference. Trinh teaches CD/perfume inclusion complexes while the present invention is directed to functionally available CD; Trinh teaches detergent surfactants, specifically amphoteric and zwitterionic surfactants, while the present invention is directed to CD-compatible surfactants comprising specific anionic surfactants not disclosed in Trinh.

While there is some overlap in the elements of Woo '442 and the present invention, the aforementioned deficiencies of the Trinh primary reference cannot be overcome by the essentially random combination with Woo '442. In fact, Applicants submit that the Trinh deficiencies are such that the Trinh/Woo'442 combination basis for a 103(a) rejection is no more than the 103(a) rejection on the basis of Woo '442 alone, addressed and overcome *supra*. It is therefore submitted that the present invention is not rendered obvious by Trinh over Woo'442. Hence, this rejection has been traversed and reconsideration is respectfully requested.

It is believed the above represents a complete response to the rejections under 35 U.S.C. §§ 112, first paragraph, 103(a), and the judicially created doctrine of obviousness-type double patenting, as well as to the objection for a defective Declaration, and places the present application in condition for allowance. Reconsideration and an early allowance are respectfully requested.

Respectfully submitted,

By: 

Denise M. Everett  
Registration No. 47,552  
Attorney for Applicants  
Dinsmore & Shohl LLP  
1900 Chemed Center  
255 East Fifth Street  
Cincinnati, OH 45202  
(513) 977-8787

870820v1  
9116-684

## VERSION WITH MARKINGS SHOWING CHANGES MADE

### **In the Specification:**

New paragraph, at page 19, immediately following line 5:

--In addition, the present composition may optionally comprise an organic hydrotrope. A hydrotrope is a chemical which has the property of increasing the aqueous solubility of various slightly soluble organic chemicals. The hydrotropes employed have complexation constants with cyclodextrin of no greater than about  $1,000 \text{ M}^{-1}$ .--

Paragraph page 23, line 29 to page 24 line 6:

--When the cyclodextrin-incompatible surfactant is combined with other components (e.g. cyclodextrin-compatible surfactants) of the present compositions, before the addition of the cyclodextrin to form the present compositions, before the addition of the cyclodextrin to form the present compositions, the cyclodextrin-incompatible surfactant is maintained in molecular aggregates such as micelles or vesicles in the composition matrix. The cyclodextrin-incompatible surfactants of the present invention generally have a critical micelle concentration ("CMC") of at least about  $10^{-4} \text{ mol/l}$ , preferably at least about  $10^{-3} \text{ mol/l}$ . When combined with other surfactants, such as cyclodextrin-compatible surfactants (as described hereinafter) having a complexation constant of no greater than about  $5,000 \text{ M}^{-1}$ , preferably no greater than about  $4,000 \text{ M}^{-1}$ , and more preferably no greater than about  $3,000 \text{ M}^{-1}$ , the total CMC of the surfactant mixture of the present compositions is no greater than about  $10^{-2} \text{ mol/l}$ , preferably no greater than about  $10^{-3} \text{ mol/l}$ , and more preferably no greater than about  $10^{-4} \text{ mol/l}$ . Additionally, ClogP values of about 3 or higher, preferably of about 3.5 or higher, are desirable for CD-incompatible surfactants.--